FISHERIES
RESOURCE
CONSERVATION
COUNCIL

2001 Conservation Requirements for Groundfish Stocks in Sub-Areas 0, 2+3

Report to the Minister
of Fisheries and Oceans

FRCC.2001.R.2
March 2001

Published and designed by:

Fisheries Resource Conservation Council
P.O. Box 2001
Station D
Ottawa, ON
K1P 5W3

Web Site: www.dfo-mpo.gc.ca/frcc

© Minister of Public Works and Government Services Canada 2001

Cat. No. Fs1-61/9-2001E
ISBN 0-662-30011-4

Aussi disponible en français

101-02942/

Table of Contents

Letter to the Minister 4

Stock by Stock Recommendations 7

- Haddock - 3LNO 8
- Redfish - 2+3K 10
- American Plaice - 2+3K 12
- Witch Flounder - 2J3KL 14
- Roundnose Grenadier - Sub-Area 0 16
- Roundnose Grenadier - 2+3 18
- Lumpfish 20
- Cod - 2GH 22
- Cod - 3Ps 24
- American Plaice - 3Ps 30
- Haddock - 3Ps 32
- Pollock - 3Ps 34
- Skates - 3LNOPs 36
- Witch Flounder - 3Ps 38

Appendices

- Appendix 1: NAFO Letter A1
- Appendix 2: Letter to Stakeholders A9
- Appendix 3: FRCC Mandate and Membership A13

LETTER TO THE MINISTER

The Honourable Herb Dhaliwal, P.C., M.P.
Minister of Fisheries and Oceans
200 Kent Street
Ottawa, ON K1A 0E6

Dear Minister,

The Fisheries Resource Conservation Council (FRCC) herewith presents to you its report on 2001 Conservation Requirements for Groundfish Stocks in Sub-Areas 0, 2 + 3.

Your Council's advice follows its consideration of the most recent scientific advice from the Department of Fisheries and Oceans, of its consultations with stakeholders in Newfoundland, and of the many written briefs submitted to the Council. The report contains advice for stocks of the south coast of Newfoundland, including 3Ps cod, as well as stocks of the Grand Banks. Following requests from stakeholders, the Council has decided to defer advice on Greenland halibut in NAFO areas 0 to 3 until May, when it will also report on Northern cod.

When the Council reported to you on 3Ps cod in January 2000, it provided its advice with a view to maintaining the TAC in the medium term. We added that the Council "...will not hesitate to recommend a further reduction in future years if the situation does not improve." The situation has not improved: the advice for a reduction in the TAC contained in this report reflects the Council's concern for the 3Ps cod stock, and its dismay at the conduct of the fishery.

Just four short years after its reopening in 1997, practices in the 3Ps cod fishery are stunningly similar to those in place prior to the closure. It seems that we collectively have learned little from history. The Council is of the view that without significant change in this fishery, the 3Ps cod stock will continue to decline. We hope that our report provides impetus and direction for change.

Change is not only one of practice, it must also be one of attitude. In 1997, the Council published A Groundfish Conservation Framework for Atlantic Canada. This framework concluded with remarks about attitudinal change, and quoted Mr. W. Bowles of Newfoundland "Many things can be done to secure a sustainable fishery for the future, but the most important thing is attitude." The attitudes which the Council has observed in the 3Ps cod fishery also bear a striking similarity to those of the pre-moratorium days.

The Council conducted consultations in January in four Newfoundland communities: St. John's, Marystown, Harbour Breton and Clarenville. These meetings were some of the best consultation sessions held in the eight year history of the Council. Well over 300 stakeholders attended the meetings, and numerous presentations and briefs were provided. One thing was made overwhelmingly clear to the Council during its Newfoundland sessions: there is an appeal for leadership to change the practices and attitudes in place.

Many fishermen noted that they have been forced to use gillnets due to the practices of their neighbours. Many stakeholders decried the use of this gear as being wasteful and destructive. While the Council notes that some fishermen have a long history of responsible use of gillnets, it is clear that many fishermen are not using this gear responsibly. It is the FRCC's strong view that the recommendations we have set forth in this report will provide a starting point for the responsible use of gear, and it is our hope that industry and fishery managers will go beyond these measures to demonstrate a positive attitudinal change.

In its report, the Council notes that many initiatives put into place by the industry itself such as trip limits, IQs, and three-tier pricing based on size and/or quality, encourage wasteful practices such as dumping, discarding and hi-grading. No one can quantify the waste in this fishery, but everyone appears to agree that it is significant. This waste is an immediate economic one, and it also has a significant impact on the future of the fishery. The unrecorded killing of fish impacts the quality of the available information, and compounds the uncertainty of the scientific assessments. The trip limits, IQs and pricing schemes are implemented by industry to manage their fishery: only industry can correct these practices.

The fish killing capacity of the Atlantic groundfish fleet continues to increase: 3Ps provides an explicit example of this. While we may have achieved significant reductions in absolute numbers of licensed fishermen, the capacity of the fleet far outstrips the available resource. Every time a fisherman decides to increase the horsepower of his boat, to install a GPS system, or to move to more efficient fishing gear, he has increased the capacity of the fleet, however incrementally. It is the Council's view that limiting the ability of the fleet to kill fish by closing areas and seasons is the only realistic way of moving to a more sustainable fishery.

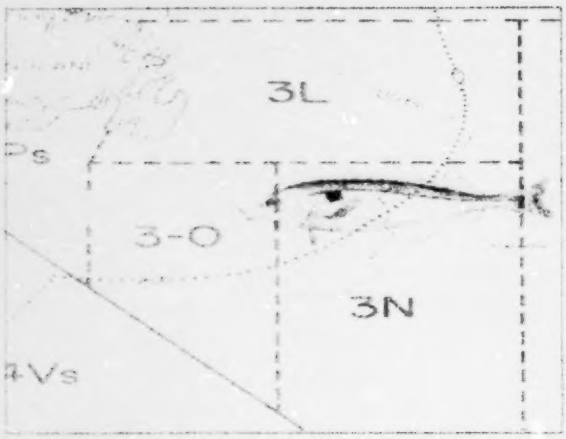
This report provides the leadership necessary for the development of a sustainable 3Ps cod fishery: it is our hope that the prescription we have written will be delivered, because we truly believe that without such medicine, the illness will kill the fishery.

Sincerely,

Fred Woodman
Chairman

Stock by Stock Recommendations

HADDOCK - 3LNO



2001 CONSULTATIONS

The FRCC held public consultations on this stock in St. John's, Marystown, Harbour Breton, and Clarenville during January 2001. Stakeholder comments referenced the high abundance of this stock historically and the need to rebuild the stock in the context of an ecosystem approach.

ANALYSIS & RECOMMENDATIONS

The 2000 DFO Newfoundland Region Groundfish Overview indicates that:

- The 1998 year class may be strong, but the significance of this yearclass is unknown.
- Most catch is taken in 3O.

Haddock abundance in 3LNO was low throughout the 1970s, higher in 1984-1988, and subsequently low. Very few haddock have been found in recent research vessel surveys. The research surveys show that recent year classes are weak and there are few prospects of the stock improving in the near future. Fish that reach spawning age must be protected if recruitment is to improve in the future for this stock.

The FRCC recommends that there be no directed fishing for 3LNO haddock in 2001/2002 and that by-catches not exceed those required for the normal conduct of fisheries directed towards other species.

Information from 1998, 1999 and 2000 surveys suggest the possibility of a good 1998 year class. Given that this used to be a major fishery until the 1960s, the Council believes that measures must be adopted to protect this year class. It is believed that the current NAFO moratorium on various stocks in this area, as well as restrictions on the 3LNO yellowtail fishery, will assist in the protection of this year class. However, the Council strongly believes that work should be undertaken to determine whether there is any particular area that could be considered as a juvenile area. The juvenile surveys that were completed in recent years and discontinued in 2000 should be reviewed closely by DFO science and used in the future RAP assessments of groundfish stocks such as haddock. The value of these surveys continues to be of much interest and consequently the data from these surveys should be considered in the future.

The FRCC recommends that DFO Science undertake the necessary work immediately to determine if any areas in 3LNO could be considered as juvenile areas for haddock.

The FRCC recommends that DFO management monitor closely the by-catch of 3LNO haddock and establish management protocols to ensure fishing mortality is minimized on the 1998 yearclass.

HISTORY OF FRCC RECOMMENDATIONS

In November 1993, the Council noted that the TAC had been reduced to 500t for 1993, from 4,100t in 1992, following recommendations from scientists that removals be limited to a by-catch fishery with a precautionary ceiling of no more than 500t. In order to prevent a repeat of the heavy exploitation that was exerted in the mid-1980s on the 1980 and 1981 year classes, the Council recommended that there be no directed fishing for the 3LNO haddock stock in 1994 and that by-catches be limited to 500t. In November 1994, the Council reiterated its advice for no directed fishery and recommended reducing the by-catch limit to 100t for 1995. The Council noted in 1995 that there had been no signs of improved recruitment and there were no prospects for stock improvement in the near future. It again recommended no directed fishing in either 1996 or 1997 and a by-catch limit of 100t each year.

Since 1998, the Council recommended continuation of the prohibition on directed fishing and that by-catch protocols be applied when prosecuting other fisheries. A recommendation to begin to identify haddock nursery areas has been added in recent years.

Figures are in 000t

Year	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000*
TAC	--	--	4.1	8.1	8.1	10	4.1	4.1				by-catch				
Catch	4	7.8	5.7	8.1	6.1	3.1	1.1	0.9	0.8	0.01	0.022	0.09	0.33	0.31	0.09	0.05

*Catch as of Nov. 01/00

1. Figures are from the Integrated Fisheries Management Plan Atlantic Groundfish

Council's Views on Stock Status

Overall stock Indicator:	low
	Compared to average
Spawning biomass:	low
Total Biomass:	low
Recruitment:	production of young haddock has been poor since 1980-81 but indications from the 1998-2000 surveys suggest improvement
Growth and Condition:	not available
Age Structure:	1998 year class may be strong
Distribution:	concentrated in 3O
Recent Exploitation Level:	unknown; fishing pressure likely reduced due to moratoria on cod and flatfish, and to reduced by-catch limits

Sources

DFO Science

A2-19(2000) Newfoundland Region Groundfish Overview

FRCC Consultations

St. John's, NF (January 22)
Marystown, NF (January 23)
Harbour Breton, NF (January 25)
Clarenville, NF (January 26)

Briefs Received

No briefs received

REDFISH - 2+3K

2001 CONSULTATIONS

The FRCC held public consultations on this stock in St. John's, Marystown, Harbour Breton, and Clarenville during January 2001. Stakeholders indicated that there is possible linkage between 1F and 2+3K redfish and that a limited quota should be established to conduct a study of the area.

ANALYSIS & RECOMMENDATIONS

The 2000 DFO Newfoundland Region Groundfish Overview indicates that:

- Recruitment has been poor since the year classes of the early 1970s.
- Pulses of recruitment have been detected in recent surveys indicating yearclasses of 1992, 1995, and 1997. The strength of the yearclasses remains unknown.
- This stock remains at a very low level.
- There are no indications that the status of the stock will change in a positive way in the foreseeable future

Although there are early indications of pulses in certain yearclasses, recruitment would require a minimum of 10 years before it would contribute to any fishery. No directed commercial fishing on this stock is justified.

The FRCC recommends that there be no directed fishing of 2+3K redfish in 2001/2002 and that by-catch protocols be applied when prosecuting other fisheries.

The FRCC recommends that a scientifically based test fishery of up to 200t be established to provide further data on the redfish in the area and its possible linkage to 1F.

HISTORY OF FRCC RECOMMENDATIONS

In 1993, the Council observed that, given the very low level of this stock, the TAC of 20,000t was too high and recommended, as a precautionary measure, that the 1994 TAC for the 2+3K redfish stock be set at 1,000t. There was practically no fishing during 1994. In November 1994, the Council recommended that any directed fishery, should it be allowed, be carried out within the framework of a scientifically coordinated test fishery and that a nominal amount of 200t be provided for that purpose in 1995. This advice was repeated for 1996.

In October 1996, the Council recommended that there be no directed fishing in 1997 on 2+3K redfish. Since 1998 the FRCC recommendation has remained unchanged that by-catch protocols be applied when prosecuting other fisheries.

Figures are in 000t

Year	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000*
TAC	35	35	35	35	35	35	20	20	20	1	0.2	0.2		by-catch		
Catch	31.5	30.3	20.8	6.9	3.3	2.4	2.6	0.02	0.06	0.01	0	0	0.002	0.003	0.002	0.027

*Catch as of Nov. 01/00

1. Figures are from the Integrated Fisheries Management Plan Atlantic Groundfish

Sources

DFO Science

A2-19(2000) Newfoundland Region Groundfish Overview

FRCC Consultations

St. John's, NF (January 22)
Marystown, NF (January 23)
Harbour Breton, NF (January 25)
Clarenville, NF (January 26)

Briefs Received

No briefs received

Council's Views on Stock Status

Overall stock Indicator:	extremely low
	Compared to average
Spawning biomass:	very low
Total Biomass:	very low; less than 10% of 1978-90 average estimate
Recruitment:	very poor
Growth and Condition:	not available
Age Structure:	poor; some positive sign of age 3 fish
Distribution:	unknown
Recent Exploitation Level:	low

American Plaice - 2+3K

2001 Consultations

The FRCC held public consultations on this stock in St. John's, Marystown, Harbour Breton, and Clarenville during January 2001. The stakeholders indicated that this stock had been the subject of a significant fishery in the past, and that the decline in the resource was not a result of the impact of the fishery. Further it was indicated that plaice appear to have moved to deeper water during the past decade. An experimental quota would permit a directed fishery to gather data on this stock.

Analysis & Recommendations

The 2000 Stock Status Report (SSR) indicates that:

- Biomass has remained low since 1992 and is currently estimated to be about 6% of the 1980-84 average.
- Estimates of seal consumption is about 15,000t of American plaice in 2J3KL.
- In recent years recruitment has been low.
- Estimates of total mortality are greater than 0.7 despite low catches.
- Little prospect of recovery in the foreseeable future.

Research vessel surveys continue to show that the stock is at a very low level.

The FRCC recommends that there be no directed fishing for 2+3K American plaice during 2001/2002 and that catches not exceed those required for the normal conduct of fisheries directed towards other species.

The FRCC recommends that co-operative science-industry surveys be developed to increase the data base for this stock.

History of FRCC Recommendations

In November 1993, the Council noted that the spawning biomass was far below any previous level and that there were no signs of good recruitment for this stock. The Council recommended that there be no directed fishing for 2+3K American plaice in 1994 and that by-catches be limited to 500t. The Council re-iterated its recommendation in November 1994 for no directed fishing, together with a reduction in the by-catch limit to 100t. This advice was repeated for 1996.

With no new scientific data available, and no evidence of a change in status of this stock, the advice of previous years - no directed fishing and a by-catch TAC of 100t - was reiterated for 1997. It was also recommended that cooperative science-industry surveys be encouraged in an attempt to increase the data base on the current and ongoing status of this stock. The recommendation for 1998 was that there be no directed fishery and that by-catch protocols be applied when prosecuting other fisheries. For 1999 and 2000, the Council additionally recommended that a co-operative industry/science survey be developed and that stock definition work be undertaken. Other than catch restrictions, these recommendations have yet to be acted on.

Figures are in 000t

Year	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000*
TAC	10	10	10	10	10	10	10	10	5	by-catch						
Catch	0.8	3	1	0.9	4.1	1.8	0.5	0.07	0.01	0.01	0.02	0.006	0.006	0.006	0.007	0.06

*Catch as of Nov. 01/00

Sources

DFO Science

A2-11(2000) American plaice in Subarea 2 and Division 3K

FRCC Consultations

St. John's, NF (January 22)
Marystown, NF (January 23)
Harbour Breton, NF (January 25)
Clarenville, NF (January 26)

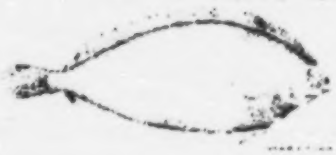
Briefs Received

No briefs received

Council's Views on Stock Status

Overall stock Indicator:	very low
	Compared to average
Spawning biomass:	very low
Total Biomass:	very low; recent estimates only 6% of early 1980s
Recruitment:	poor
Growth and Condition:	not available
Age Structure:	gradual reduction in number of older fish; all age groups depressed
Distribution:	moved to deeper water in late 1980s
Recent Exploitation Level:	low; by-catch only

WITCH FLOUNDER - 2J3KL



2001 CONSULTATIONS

The FRCC held public consultations on this stock in St. John's, Marystown, Harbour Breton, and Clarenville in January 2001. No stakeholder comments were received on this stock.

ANALYSIS & RECOMMENDATION

The 2000 Report of the NAFO Scientific Council indicates that:

- This stock remains at a very low level.
- There are some indications of movement to deeper waters of 3L.
- The Scientific Council does not anticipate any marked improvement in the fishable part of the population over the next several years.

Witch is a slow-growing species that may live to 30 years. Age groups in the 2J3KL stock have been reduced substantially since the 1970s. There are fewer older fish now. Fishing has generally taken fish from pre-spawning and spawning concentrations. Recently, witch appears to have moved to deeper water (in excess of 900 m). Recent data on this stock indicate that it has dramatically declined since the 1980s; relative biomass in 1994 was estimated to be 4% of the 1986 level. Research surveys in 1996 found that witch was somewhat more abundant in the Flemish Pass area which could make it vulnerable to by-catch in the turbot fishery ouside 200 miles and may have migrated from Canadian waters. Generally, the stock is at the lowest level ever observed and there are no signs of improving recruitment. The shrinking area of distribution of this stock, despite its low biomass, may increase its vulnerability to fishing.

The FRCC recommends that there be no directed fishing for 2J3KL witch flounder in 2001/2002 and that by-catch protocols be applied when prosecuting other fisheries.

HISTORY OF FRCC RECOMMENDATIONS

In 1993, the Council noted that the biomass of witch flounder in 2J3KL was far below any previous estimate in the 15-year time series, and consequently recommended that, as a precautionary measure, the 1994 TAC for 2J3KL witch flounder be reduced to 1,000t. In November 1994, the Council recommended that there be no directed fishing for 2J3KL witch flounder in 1995 and that by-catches be limited to 100t in 1996. The Council repeated this recommendation for 1997.

In October 1996, the Council recommended that there be no directed fishing for 2J3KL Witch flounder in 1997 and that by-catches be limited to 100t. The Council also recommended that cooperative science-industry surveys should be encouraged.

Since 1998, the FRCC recommended that there be no directed fishery and that by-catch protocols be applied when prosecuting other fisheries.

Figures are in 000t

Year	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000*
TAC	8	8	6	5	5	4	4	4	4	1			by-catch			
Catch	3	3.9	4.5	3.9	4.9	3.9	4	2.6	0.4	0.6	1.3	1.7	1.2	1.1	0.38	0.006

*Catch as of Nov. 01/00

1. Figures are from the Integrated Fisheries Management Plan Atlantic Groundfish

Sources

NAFO

NAFO Scientific Council Reports - 2000

FRCC Consultations

St. John's, NF (January 22)
Marystown, NF (January 23)
Harbour Breton, NF (January 25)
Clarenville, NF (January 26)

Briefs Received

No briefs received

Council's Views on Stock Status

Overall stock Indicator:	very low
	Compared to average
Spawning biomass:	very low
Total Biomass:	very low
Recruitment:	poor; no signs of improvement
Growth and Condition:	not available
Age Structure:	not available
Distribution:	shrinking; may have migrated to deeper waters in early 1990s
Recent Exploitation Level:	appears low but if stock has migrated to deeper waters outside the Canadian zone, could be vulnerable to unregulated fishing

Roundnose Grenadier - Sub-Area 0

2001 Consultations

The FRCC held public consultations on this stock in St. John's, Marystown, Harbour Breton, and Clarenville during January 2001. No stakeholder comments were received on this stock.

Analysis & Recommendation

The NAFO Scientific Council Report for 2000 notes that the stock found in the Davis Strait is probably connected to the other stocks in the North Atlantic. The stock component found in sub area 0 +1 is at the margin of the distribution area. Previous Canadian and Russian surveys showed that most of the biomass generally was found in sub area 1. The exploitation level is considered to be low in recent years and the stock seems to be at very low levels. The Scientific Council recommends that there be no directed fishing.

The FRCC recommends that there be no directed fishing for roundnose grenadier in sub area 0 in 2001/2002.

History of FRCC Recommendations

In its 1993 and 1994 reports, the Council recommended the TAC for Sub-area 0 roundnose grenadier be set at 3,000t. In its 1995 report, Council recommended that should there be directed fishing on this stock, it be done in the context of a scientifically conducted test fishery. In Building the Bridge, Council's November 1996 report, it was recommended that there be no directed fishery on this stock and cooperative industry-science surveys should be encouraged. Since 1998 the Council has continued its recommendation for no directed fishing.

Figures are in 000t

Year	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000*
TAC	4	4	4	4	4	4	4	4	4	4	1	Moratorium				
Catch	0.2	0.008	0.01	0.5	0.08	0.29	0.19	0.11	0.05	0	0	0	0.002	0	0	0.003

1. Figures are from the Integrated Fisheries Management Plan Atlantic Groundfish
*Catch as of Nov. 01/00

Sources

NAFO

NAFO Scientific Council Reports - 2000

FRCC Consultations

St. John's, NF (January 22)
Marystown, NF (January 23)
Harbour Breton, NF (January 25)
Clarenville, NF (January 26)

Briefs Received

No briefs received

Council's Views on Stock Status

Overall stock Indicator:	very low
	Compared to average
Spawning biomass:	likely low (unspecified)
Total Biomass:	very low
Recruitment:	not available
Growth and Condition:	not available
Age Structure:	not available
Distribution:	unknown
Recent Exploitation Level:	low

Roundnose Grenadier - 2+3

2001 Consultations

The FRCC held public consultations on this stock in St. John's, Marystown, Harbour Breton and Clarenville during January 2001. No stakeholder comments were received on this stock.

Analysis & Recommendation

The 2000 report of the NAFO Scientific Council notes that due to limited data it is not possible to determine the state of the stock and was therefore not able to provide any advice.

The FRCC recommends that there be no directed fishing for roundnose grenadier in 2+3 in 2001/2002.

History of FRCC Recommendations

In earlier reports, released in the fall of 1993, and 1994, the Council recommended that the TAC for roundnose grenadier be set at 4,000t in 1994 and again for 1995. The TAC was set at 500t for 1995. For 1996 and 1997, the FRCC recommended there be no directed fishing on roundnose grenadier in Sub Area 2+3 and that cooperative industry science surveys would assist in furthering the knowledge on this stock. Since1998, the Council continued its recommendation that there be no directed fishery.

Figures are in 000t

Year	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000*
TAC	11	11	11	11	11	11	11	11	11	3	3	1		Moratorium		
Catch	4.9	7.4	8.3	6.3	4.9	3.9	5	7	4.4	4	4	4.2	3.5	0.12	0.23	0.202

*Catch as of Nov. 01/00

1. Figures are from the Integrated Fisheries Management Plan Atlantic Groundfish

Sources

NAFO

NAFO Scientific Council Reports - 2000

FRCC Consultations

St. John's, NF (January 22)
Marystown, NF (January 23)
Harbour Breton, NF (January 25)
Clarenville, NF (January 26)

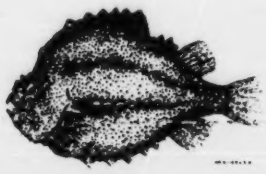
Briefs Received

No briefs received

Council's Views on Stock Status

Overall Stock Indicator:	unknown
	Compared to average
Spawning Biomass:	unknown
Total Biomass:	unknown
Recruitment:	unknown
Growth and Condition:	unknown
Age Structure:	unknown
Distribution:	unknown
Recent Exploitation Level:	unknown

LUMPFISH



2001 CONSULTATIONS

The FRCC held public consultations on this stock in St. John's, Marystown, Harbour Breton, and Clarenville during January 2001. Fishermen reported landings of lumpfish were good and indicated that the fishery is now only open for three weeks per year with limits on gear as well.

ANALYSIS & RECOMMENDATIONS

The 2000 DFO Newfoundland Region Groundfish Overview indicates that:

- There are no scientific investigations to determine the current status of this stock.
- Surveys are not useful in evaluating this resource due to relative inshore distribution of the stock compared to survey coverage.

Lumpfish males establish breeding territories inshore; these may be used year after year. Data from studies which have monitored these territories indicate exceptional impact from the fishery. The lumpfish fishery is exclusively on pre-spawning mature females and therefore the spawning stock is vulnerable to over exploitation. Since the cod moratorium, there has been an increase in fishers entering this fishery. Research vessel surveys are not considered to be representative of the stock due to the seasonal migratory pattern of this species. There is insufficient new data to determine the status of this resource. The FRCC is of the view that the effort controls implemented in recent years appear to have been effective.

The FRCC recommends that measures taken to control effort in the past few years be continued.

The FRCC also notes that the inshore nature of this stock lends itself to more local community-based research.

The FRCC recommends that fishers and managers assess their local stocks and implement appropriate conservation measures in agreement with the local stock status, e.g., full closures, rotating local closures, shortening seasons, effort reductions, and the Department provide the Council with the fishery status by these local areas at the end of the season.

Since this fishery is very localized the FRCC believes that programs be encouraged with local fishermen to get data on the stock. Consequently, the FRCC continues to repeat the recommendation below.

The FRCC recommends that fishers and science gather more information on this stock through the establishment of an Index Fishermen Program especially with respect to: catch and effort levels, spawning patterns, growth rates, maturation, population structure, temperature preferences and habitat preferences. Further recommendations for continuation of this fishery is incumbent upon information of this nature being provided to the council.

HISTORY OF FRCC RECOMMENDATIONS

The FRCC first reported on this particular stock in 1995. The Council recommended that management measures, such as shortened season, be used to reduce the effort on this stock. It further recommended that roe content monitoring programs, similar to those employed in the capelin fishery, be established to ensure that fishing takes place at an appropriate time and that closed and protected areas be established for this stock.

In October 1996, the Council recommended that new management measures be taken to insure conservation of lumpfish and that these measures include a combination of the following:

- Roe content monitoring programs should be established to determine timing of the fishery to maximize yield/fish.

Figures are in 000t

Year	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000*
TAC																
Catch	1	1.5	4	3.3	2.3	1.2	2.1	1.9	2.4	1.5	1.2	1.5	2.26	1.1	2.2	

*Catch as of Nov. 01/00

1. Figures are from the Integrated Fisheries Management Plan Atlantic Groundfish

- Closed and protected spawning areas must be established throughout the range of the stock.
- More localized management must be established.
- Low effort must be maintained.
- Gear limits and the shortened season should be maintained.

The Council noted that unless these measures were effectively implemented, the closure of this fishery was imminent. Since 1998 the Council re-iterated that measures taken to control effort in the past few years be continued and that fishers and Science gather more specific information on this stock through an Index Fisherman Program.

Council's Views on Stock Status

Overall stock Indicator:	improving on North-east coast; stable on South coast
	Compared to average
Spawning biomass:	unknown
Total Biomass:	unknown
Recruitment:	unknown
Growth and Condition:	not available
Age Structure:	fishery is exclusively on mature females before spawning
Distribution:	seasonal migratory patterns; fishing concentrated on in-shore spawning areas
Recent Exploitation Level:	fishery regulated by effort; number of participants in fishery increased since cod moratorium; number of nets allowed and duration of fishery have been reduced in recent years

Sources

DFO Science

A2-19(2000) Newfoundland Region Groundfish Overview

FRCC Consultations

St. John's, NF (January 22)
Marystown, NF (January 23)
Harbour Breton, NF (January 25)
Clarenville, NF (January 26)

Briefs Received

No briefs received

Cod - 2GH

2001 Consultations

The FRCC held public consultations on this stock in St. John's, Marystown, Harbour Breton, and Clarenville in January 2001. No stakeholder comments were received on this stock.

Analysis & Recommendation

The 2000 DFO Newfoundland Region Groundfish Overview indicates that:

- There has been no reported catch of 2GH cod since 1991.
- The surveys conducted from 1996-1998 detected very few fish and in 2000 the 2G component of the survey was dropped and 2H is to be surveyed in alternating years.
- The status remains unknown but abundance is assumed low.

There is very limited information on this stock. The shrimp fishery in the area uses the Nordmore grate which reduces the capture of this species.

The FRCC recommends that there be no directed fishing for 2GH cod in 2001/2002.

History of FRCC Recommendations

In November 1993, the Council recommended that the 1994 TAC for 2GH cod be set at 1,000t as a precautionary measure. The consultations held in 1994 confirmed that there had been very few cod in 2GH in recent years and led the FRCC to recommend, in November 1994, that any fishery for cod in 2GH be carried out within the framework of a scientifically coordinated test fishery. The Council recommended that a nominal amount of 200t be provided for this purpose. Since 1996 the FRCC recommended no directed fishing take place on this stock and cooperative industry science surveys should be encouraged.

Figures are in 000t

Year	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000*
TAC	20	20	20	20	20	20	20	20	1	1	0.2	0.2		Moratorium		
Catch	0.54	0.5	0.13	0.4	0.43	0.23	0	0	0	0	0	0	0	0	0	0

*Catch as of Nov. 01/00

1. Figures are from the Integrated Fisheries Management Plan Atlantic Groundfish

Sources

DFO Science

A2-19(2000) Newfoundland Region Groundfish Overview

FRCC Consultations

St. John's, NF (January 22)
Marystown, NF (January 23)
Harbour Breton, NF (January 25)
Clarenville, NF (January 26)

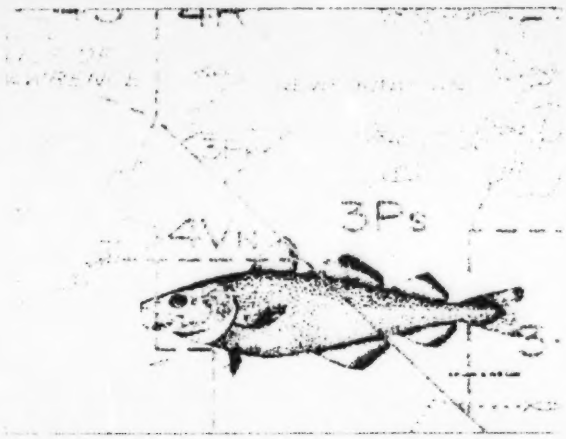
Briefs Received

No briefs received

Council's Views on Stock Status

Overall indicator :	very low, status unknown
	Compared to average
Spawning biomass:	unknown
Total biomass:	unknown
Recruitment:	unknown
Growth/Condition:	unknown
Age structure:	unknown
Distribution:	unknown
Recent exploitation:	none - no fishery

Cod - 3Ps



2001 Winter Consultations

The FRCC conducted public consultations on this stock in St. John's, Marystown, Harbour Breton, and Clarenville, Newfoundland in January 2001. A mix of views was heard on the status of the stock, but the majority expressed strong concerns about the present practices of the fishery and that the stock may have declined in the past few years. There was no consensus on whether or not the stock could sustain present levels of mortality. There was concern that present assessment methods could not capture distribution changes in the stock that might lead to bias in survey interpretations. There were arguments put forth that young fish are poorly surveyed, and that young cod (ages 1-3) are numerous inshore. There were strong feelings that the older fish, presumably of the 1989 and 1990 year-classes, had been over-exploited and that this would negatively impact future recruitment potential.

As in previous years, there were overwhelming concerns that too much of the fishery was concentrated in Placentia Bay. There were strong statements that Placentia Bay was being heavily over-exploited (especially in the bottom of the Bay), and that limits on entry or on the quantities of fish harvested there must be put in place. There were parallel concerns that coastal sub-stocks were being over-harvested by this concentration of effort. There were equally strong concerns that the predominance of gillnets in this fishery was contributing to poor fishing practices, and that a return to the traditional balance and patterns of a substantial hook and line fishery should be encouraged. There were views from stakeholders and the Fish, Food and Allied Workers Union (FFAW) that stability should be a goal in the fishery, and that the current quota was in line with stock conservation goals.

Strong concerns were expressed by fishermen about regulations that encouraged the diminishment of the traditional winter hook and line fishery in Fortune Bay, the aggregation of gillnet effort in Placentia Bay, and the amount of discarding, hi-grading, and waste in the fishery.

Views of fishermen suggested a sense of caution with the stock. Despite some optimism about recruitment prospects and stock robustness, many expressed dire concern that current fishery practices could not be sustained.

Analysis & Recommendations

The paramount FRCC objective for this stock remains the rebuilding of a spawning stock biomass composed of a wide range of ages, particularly of older fish, across all spawning components. It is therefore important to select conservation measures and a TAC that will enhance the probability that the spawning biomass will continue to increase and broaden in age structure among all stock components.

The spring 1999 Stock Status Report (SSR) reported on the state of the 3Ps cod stock and indicated a total 3+ biomass near 250,000t and a spawning biomass at very high levels relative to those of the past few decades (approximately 150,000t). The predominant view of stakeholders following that assessment was that these SSR estimates were conservative, and that the stock was essentially rebuilt beyond historical levels. These SSR and industry views led the FRCC to advise a TAC of 30,000t for 1999. The subsequent assessment reported in the fall 1999 SSR presented a less positive view of stock status (200,000t of age 3+ biomass) referenced to January 1999 than the spring SSR and suggested that previous views were overly optimistic. However, the spawning biomass was still reported to be the highest since 1962 (150,000t).

The fall 2000 SSR reported a total 3+ biomass of 120,000t and spawning biomass of 106,000t, also referenced to January 1999 (revised downward), and a 3+ biomass of 123,000t and spawning stock biomass of 92,000t in January 2000. Under an assumption that the quota would be taken, the April 1, 2000 spawning biomass was estimated at 82,000t, and April 1, 2001 at 76,000t.

Figures are in 000t

Year	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000*
TAC	41	41	41	41	35.4	35.4	35.4	35.4	20	Moratorium			10	20	30	20
Catch	51.4	57.9	54.3	38.6	37.8	40.7	42.4	29.6	14	0.66	0.41	0.20	9.0	19.60	28.10	18.6

*Catch to Feb. 22/01 from DFO Newfoundland Region

1. Figures are from the Integrated Fisheries Management Plan Atlantic Groundfish

The FRCC subjected all assessments to careful scrutiny. It was noted that the recent pessimism about the stock was largely a result of a change in the model structure which treated the survey data from the Burgeo/Hermitage Channel area and the remainder of the stock as separate indices (a more variable index would then be discounted in terms of influence on the biomass estimate). It was noted that employing the same model structure as in 1999 would result in only a slight reduction in estimated biomass from the levels estimated in the fall 1999 SSR.

Investigations of the structure of the assessment indicate that there is considerable uncertainty in the results. Uncertainty results from unknown stock structure, the lack of fisheries data during the moratorium, the relatively low levels of removals from fisheries during and after the moratorium, and the conversion from the Engels trawl winter survey to the Campelen trawl spring survey in 1993. Moreover, uncertainty is likely to exceed that presented in the SSR risk assessments as a consequence of uncertainty in model structure and survey inter-calibration. The existence of such uncertainty is an inevitable consequence of the current data available with respect to the complexity of this stock. Nevertheless, any prudent interpretation of the assessment must take the large uncertainty into account.

It was the view of the FRCC that the SSR represented a further attempt to provide an unbiased view of the stock status but there was considerable uncertainty as to the appropriate model structure that should be used. The FRCC also noted that GEAC survey data, 35-65 ft logbook data, and independent acoustic surveys in 3Ps were not mentioned in the SSR.

The FRCC examined data from the GEAC fall surveys from 1998-2000 and submitted views of industry and fishermen that became available subsequent to the RAP session. These data together suggested a more optimistic view of the stock state than indicated in the current SSR for the shelf and banks, but a pessimistic view of the bays, especially Placentia Bay.

Given the variable SSR descriptions of stock status and interpretations from other sources (industry and sentinel, acoustic, GEAC surveys), the FRCC believes that it is inappropriate to attempt to satisfy short-term expectations in this fishery by closely tracking the rises and falls of the most current estimates of fishable biomass. It is certain that such estimates are more variable than is the stock. Hence, a precautionary longer-term strategy is recommended that takes into account the range of current assessments and the expected long term productivity of the stock. **The fundamental goal of this strategy is to conserve the spawning stock, including all of its components. In addition, a basic tenet of the longer-term strategy is to provide a higher degree of TAC and management stability to fishermen and industry than possible with past TAC strategies.**

Council's Views on Stock Status

Overall indicator:	stock declining
	Compared to average
Spawning biomass:	on par with long term average
Total biomass:	revised down in recent assessment
Recruitment:	weak in past decade, recent years show improvement
Growth and Condition:	stable growth, lower than in the 1970s; good condition
Age structure:	no apparent strong year classes since 1989, 1990
Distribution:	less widespread in recent year, less in coastal areas
Recent exploitation:	low; but rising, and uncertain due to discarding and hi-grading

The 2000 fall SSR indicates that:

- Spawning biomass in January 2000 is estimated at 92,000t, which is down from current estimates of January 1999 biomass (106,000t) and estimates made in the fall 1999 assessment (147,000t).
- The biomass of fish aged 3 and older in January 2000 is estimated to be 123,000t, which is comparable to current estimates of January 1999 biomass (120,000t), but down from estimates made in the fall 1999 assessment (198,500t) and the spring 1999 assessment (250,000t).
- Estimates of recruitment (numbers of fish at age 3) show a general downward trend over the period 1959 to 1999 with all year classes arising after 1989 being particularly low. There is some indication that the 1997 year class might be somewhat better but recent estimates of recruitment have more uncertainty than historic estimates.
- Females continue to mature at relatively young ages: the proportion of 6 year old females that are mature has increased from about 30% in the 1970s and early 1980s to over 80% in recent years. Size at age is lower in the 1990s than it was in the 1970s, especially for older fish.
- There is a greater than 50% risk that the spawning biomass will decline further in the year 2001-2002 at catch levels of 10,000t or higher, and a greater than 89% risk at catch levels of 20,000t or higher

The conservation measures the FRCC has previously set out for this stock (dispersal of catch over space and time; minimize fishing on spawning concentrations; protection of 1989, 1990 year classes) have not been effectively implemented. In particular, fishing mortality on the older fish has been excessive, and a concentration of effort and catch in the bottom of Placentia Bay and on portions of St. Pierre Bank is unacceptable at current levels and may threaten the sustainability of local spawning stocks and fisheries. In addition, there are unsubstantiated reports of substantial wastage, discarding, and hi-grading in the fishery.

The spatial distribution of the harvest has changed from historical times, especially with the concentration of effort in Placentia Bay during the 1999-2000 fisheries. This fishery yielded approximately 45% of the total catch in the most recent year. Catches in Placentia Bay traditionally comprised roughly one-third of the catch in 3Ps. A preliminary comparison of spring and fall acoustic surveys in Placentia Bay, GEAC fall surveys, and SSR biomass in the past few years suggests that approximately 1/4-1/2 of the estimated stock biomass has been located in the Placentia Bay region in spring and fall.

The FRCC has received mixed views on recruitment in the 1990s. On the one hand, the SSR suggests that year classes since 1989 have been poor. On the other, additional research, the GEAC survey, and the views of fishers and industry are not fully consistent with this view, and suggest that there may be an abundance of smaller fish coming into this system, likely as a direct consequence of the large numbers of 1989 and 1990 mature spawning fish in the system in 1997 and 1998. Unfortunately, these fish may have been so reduced in 1999 and 2000 as to cap the probability of strong recruitment in 1999 and 2000.

The stock spawns primarily from April to June. Spawning ground behavior typically begins in March. Spawning is widespread in this stock and known spawning grounds occur in Placentia Bay at the Bar Haven shallows, Oderin Bank, and Cape St. Mary's, in Fortune Bay and also on and adjacent to the St. Pierre and Burgeo Banks.

The FRCC recommends that in order to protect local spawning components and restrict fishing of the winter mixed cod stocks in the area of Burgeo Bank the following closures must be implemented:

- **the winter fishing closure on Burgeo Bank from November 15 through April 15 be continued.**
- **the areas inside the perimeters of Sound, Woody and Bar Haven Islands, from Garden Cove and Swift Current to Ship Island, be closed to all cod fishing except by resident fishers. The zone would include a buffer area of approximately 500 meters seaward from the islands. Other ongoing fisheries in the area should continue as normal i.e. lobster, lumpfish, etc.**
- **the bank and shelf areas including the Halibut channel area of 3Ps (3Psdefgh) should be closed to all cod directed fishing activity for the period March 1st through June 30th.**

- **for the closure areas and seasons specified above restrictive by-catch measures should be implemented to minimize by-catch of this stock in all fisheries directed towards other species.**

The FRCC notes that the 3Ps fishery has changed from a mixed gear fishery with a strong line trawl component to a fishery dominated by gillnets. The use of gillnets contributes to problems associated with spoiled fish, discarding, and poor quality of landed fish. These conditions have been reported in the fishery and are believed to have resulted in total catches being higher than reported. While there are several reasons for this situation, the number of gillnets and the length of time elapsed between tending gillnets is thought to be the primary problem.

The FRCC is strongly of the view that a sustainable fishery for this stock can most readily be attained through the restoration of traditional fishing patterns. The rapid and recent expansion of the use of gillnets must be reversed and the proportion of hook and line fishing increased to approach the mix of these gears in the fishery historically. A target to be achieved over the short term would be to limit the proportion of the catch harvested by gillnets while encouraging the traditional hook and line winter fishery in Fortune Bay and restoring the balance of different fishing gears. **As the FRCC has recommended previously, no gillnets should be left untended in the water.**

The FRCC recommends that in order to change the poor fishing practices associated with gillnets the following measures be implemented:

- **subject to the closures recommended above, the fishery for gillnets be restricted to the period June 1 through August 31.**
- **the gillnet fishery be limited to a maximum catch of 33% of the total Canadian quota for vessels less than 65 feet.**

The FRCC notes that the data from the sentinel survey show a decline in catch rates in the fall of 1999 and 2000, especially of larger fish. Limited data is available for small fish. The setting of a trap sentinel fishery could provide an index of young fish (1-4 years of age) in the coastal area where few other data are available.

The FRCC recommends that the sentinel fisheries continue as historically conducted and be enhanced with a trap program whose primary objective is to provide an index of young fish abundance. A secondary objective of such an enhanced sentinel trap fishery would be to tag fish to determine their patterns of movement.

The rapid growth in this stock that was evident from 1993 to 1998 and that allowed the reopening of and expansion of this fishery has been reversed by a concentration of fishing effort, over-exploitation, and poor fishing practices. The FRCC is particularly concerned about the effects on fishing practices and wastage related to IQ's, trip limits, and a three-tiered pricing system based on fish size. The poor fishing practices are also negatively impacting the scientific assessment of the stock.

The FRCC recommends that DFO must achieve better monitoring/ control of the hi-grading, discarding, and waste in the fishery. Analysis must be undertaken, to provide reasonable estimates of the degree of additional fishing mortality caused by these practices through more effective use of the observer program. All reasonable steps must be taken to reduce waste of the resource as it significantly reduces the potential benefits derived from the fishery.

The FRCC believes that to achieve the stated goals for this stock, management must adapt to current conditions and recent adjustments in the fishery, in particular the switch from traditional longline gear to gillnets, the targeting of specific year classes, and the concentration of effort in specific areas. The FRCC has recommended a suite of conservation measures whose intent is to enhance the age structure and protect spawning components from over-exploitation.

As further measures are required to effectively transition the fishery in the short term the FRCC recommends that DFO consult with the fishermen to action the following:

- **establish a joint DFO/industry program to cleanup lost gillnets;**
- **establish a gear tagging program for gillnets similar to that in use in other fisheries eg. Lumpfish;**
- **promptly establish minimum hook sizes for the hook and line fishery that will avoid targeting smaller juvenile cod; and**
- **develop the use of more benign gear for harvesting cod eg. improved selectivity of cod traps, Norwegian seines.**

It is important to note that the timely implementation of all of the above recommendations, as well as a reduction in the TAC, are thought to enhance the

likelihood of stability in this fishery in the medium term (3-5 years) and maintain the prospects for longer-term rebuilding.

The FRCC will attempt to increase the stability in TAC for the fishery, at the same time as recognizing the uncertainty about current stock status. Two concepts are important in this change. The first is that the stock will have an assigned base TAC level below which any fishery will be an index fishery only. The base level is similar to that initially set to re-open the stock in 1997.The second is that the quota will remain the same from year to year unless changes in the overall state of the stock and the fishery occur that are judged by the FRCC, in light of the SSR and views from fishermen, to be significant (e.g. recruitment, spawning biomass, fishery practices), in which case the TAC would be revised up or down by a fixed amount. The FRCC considers that a base TAC for 3Ps cod be 10,000t per year, and that the TAC unit of annual change should be 5,000t.

It should be noted that the FRCC is of the view that without significant change in the fishery, the 3Ps cod stock will likely continue to decline.

The FRCC recommends that the 2001/2002 and 2002/2003 TAC for 3Ps cod be set at 15,000t for each year. If a marked change in the stock status occurs within the short term then the FRCC will recommend further steps to conserve and rebuild the stock including a recommendation to significantly reduce the TAC.

The FRCC is of the view that DFO begin the process to change the TAC year for this stock to begin in the fall and extend to the following end of summer to better reflect the seasonal timing of the fishery as well as the availability of data on the stock. This change should be undertaken as soon as reasonably possible.

History of FRCC Recommendations

In August 1993, the low estimates of biomass for this stock led the Council to recommend that fishing be discontinued, at least until April 30, 1994. The fishery was closed by DFO in September 1993. While the Council indicated in its November 1993 report that recommendations for this stock would be forthcoming following the analysis of the results of the spring survey, such a review was made unnecessary when the fishery was closed by the Minister of Fisheries and Oceans for the whole year.

In November 1994, the Council determined that the results of the 1994 survey confirmed earlier survey results and indicated that the stock abundance was at the lowest level observed since 1978. Consequently, the Council recommended that there be no directed fishing for 3Ps cod in 1995 and that by-catches be kept to the lowest possible level. The Council also recommended that efforts be made to expand surveys into inshore areas, that no recreational/food fishery be permitted and that a broad-based Sentinel Fishery program be implemented.

The Council's recommendations for 1996 were for a continued moratorium on commercial fishing and a significantly expanded Sentinel Fishery with an upset limit of 3,000t to evaluate the high catch rates found by Sentinel fishermen. In 1997 the FRCC recommended a limited commercial fishery with a TAC of 10,000t.

In March 1998, the Council recommended that the TAC for this stock be set at 20,000t, but that measures be taken to disperse the total catch over the fishing year to minimize impacts on stock sub-components. As in 1997, the 1998 recommendations included strict measures for the Conservation Harvesting Plans.

In March 1999, based on the positive outlook in the stock status report on this stock as well as the optimistic views of industry, the FRCC recommended that the TAC be set at 30,000t, and that this TAC was to be dispersed over the full fishing year outside the spawning period. Additional recommendations were made that were intended to enhance the age structure by increasing the survival rate of older fish, to protect 4RS3Pn fish overwintering on Burgeo Bank, and improve the reliability of the trawl survey. The FRCC recognized the significant efforts being made by the Department of Fisheries and Oceans in response to the Council's recommendations to develop more information on the migration and mixing of stocks, especially in Division 3L and in the northern Gulf of St. Lawrence through tagging efforts.

In 2000, based on a revised outlook for the stock the FRCC recommended the TAC be reduced to 20,000t. In addition, the FRCC recommended the closure of several known spawning areas and further restrictions on the use of gillnets in the fishery.

Sources

DFO Science

A2-02(2000) Subdivision 3Ps Cod
A2-02(1999) Subdivision 3Ps Cod

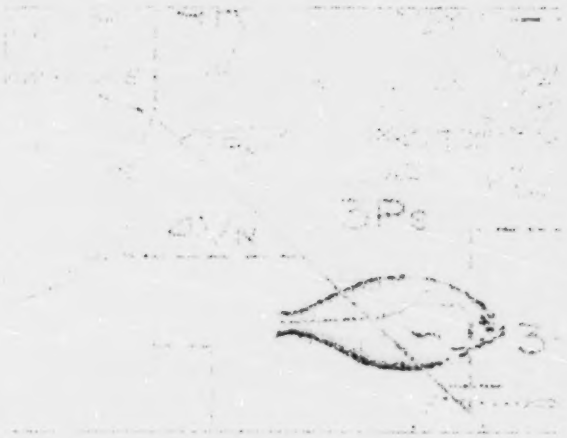
FRCC Consultations

St. John's, NF (January 22)
Marystown, NF (January 23)
Harbour Breton, NF (January 25)
Clarenville, NF (January 26)

Briefs Received

Beothic Fish Processors Ltd. – Harry Harding Clarenville Presentation (2001-010-00057)
Boxey, Wreck Cove & Coombs Cove Fishermen Committee – Kevin Lawrence (2001-010-00060)
Comité des pêches et des cultures marines de Saint-Pierre et Miquelon – Karl Beaupertuis (2001-010-00031)
Gregory Day, Fisherman, Garnish, Fortune Bay (2001-010-00050)
Fish, Food and Allied Workers – Earle McCurdy (2001-010-00049)
Fish, Food and Allied Workers – Harvey Jarvis (2001-010-00053)
Fish, Food and Allied Workers – Harvey Jarvis (2000-010-00475)
Fishharvesters of Burgeo - William Bowles (2001-010-00027)
Fish Harvesters of Fortune Bay and Hermitage Bay (2001-010-00061)
Fisheries Association of Newfoundland and Labrador – Alastair O'Rielly (2001-010-00062)
Fisheries Products International Marystown Presentation (2001-010-00056)
Groundfish Enterprise Allocation Council Marystown Presentation (2001-010-00058)
National See Products – Michael O'Connor Clarenville Presentation (2001-010-00059)
Seal Cove Fishermen – Will Reed (2001-010-00054)
Sea Crest Corporation of Canada Ltd.- Roy Roberts, Debbie Roberts, Brian Roberts, Dianne Hallett, Dave Abbott, Lara Hallett, Allan Simms (2001-010-00055)
Southern Shore Inshore Fishermen's Action Committee – Donald Drew (2001-010-00023)
Sidney Poole, Fisherman, Belleoram, Fortune Bay (2001-010-00033)

American Plaice - 3Ps



2001 Consultations

The FRCC held public consultations on this stock in St. John's, Marystown, Harbour Breton, and Clarenville in January 2001. Stakeholders indicated a growing presence of American plaice in the bays and in the harvest of other directed fisheries in the 3Ps area, particularly in the witch flounder and cod fisheries. The offshore fishery for witch flounder is now being halted due to by-catch protocols. Fishers recommended the FRCC establish a TAC for the stock in 2001.

Analysis & Recommendations

The 2000 DFO Newfoundland Region Groundfish Overview indicates that:

- Catches in recent years are increasing due to increasing by-catches.
- The 2000 survey showed increases in abundance and biomass yet estimates are well below those of 1983-1987.
- There is little prospect of significant rebuilding in the short to medium term.

From the 1999 DFO Stock Status Report the Council notes that catches of 3Ps plaice were highest from 1968-1973 and averaged over 10,000t. The 1999 SSR indicated that total mortality remained high in 1994 and 1995 following the imposition of the moratorium despite low catches. Since 1980, catches have exceeded 5,000t only twice and there have been clear indications that the stock has declined dramatically.

The inshore fishermen noted that they are observing increased abundance of plaice over a wide distribution.

The GEAC surveys indicate that the stock has increased significantly in recent years with abundance and biomass estimates in the surveys reflecting over 250% growth. Total abundance in the 2000 survey estimated 48 million fish and a biomass estimate of over 32,000t, up from an estimate of 9,200t in 1998. In addition, the by-catch in the witch fishery has increased from 693 kg/hr in 1999 to 877 kg/hr in 2000 and is indicating a rate of 1361 kg/hr in the 2001 fishery to date. The most recent DFO survey showed an increase in both abundance and biomass and the current relative estimate is about 22,000t, up from less than 10,000t in 1997.

The FRCC has reviewed the current indicators from the commercial fishery, the trend in by-catches, the most recent SSR and the indications from fishermen throughout the stock area and is of the view that ongoing fisheries for which quotas have been established be permitted to be conducted. The exploitation from the by-catches in these other directed fisheries is low relative to the overall stock biomass.

The FRCC recommends that there be no directed fishing for 3Ps American plaice in 2001/2002.

The FRCC recommends that the 3Ps witch flounder fishery be permitted to be conducted as a mixed fishery with witch as the main target. The catch of American plaice should be restricted to that required to prosecute such a fishery so thatat no time should the by-catch of American plaice exceed the catch of witch. The by-catch of American plaice should not exceed the level required for the normal conduct of other directed fisheries. Standardized mesh sizes should be used throughout the fishery.

The FRCC recommends that industry in consultation with scientist establish a scientifically based test fishery of up to 100t for each of Placentia and Fortune Bays to conduct surveys in the coastal areas with the following objectives; to determine the abundance of plaice in the nearshore waters and bays outside the research vessel and GEAC survey areas; to determine whether the plaice that occur shoreward of these surveys are distinct from the plaice found in offshore areas including the use of a tagging program; and to report the results back to the FRCC.

Figures are in 000t

Year	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000*
TAC	5	5	5	5	5	4	4	4	3				by-catch			
Catch	4.2	5.1	4.9	3.5	3.9	3.9	4.2	2.6	0.3	0.1	0.09	0.66	0.17	0.42	0.65	0.29

*Catch as of Nov. 01/00

1. Figures are from the Integrated Fisheries Management Plan Atlantic Groundfish

History of FRCC Recommendations

In November 1993, the Council noted that this stock had declined below any previously-observed level and that there were no signs of good recruitment. The Council recommended that there be no directed fishing and that by-catches be limited to 500t during 1994. The recommended by-catch limit was further reduced in 1995. Closure and minimal by-catch were again recommended for 1996.

With no new scientific data available, and no evidence of a change in status of this stock, the advice of previous years - no directed fishing and a by-catch TAC of 100t - was reiterated for 1997. It was also recommended that cooperative science-industry surveys be encouraged in an attempt to increase the data base on the current and ongoing status of this stock.

For 1998, the Council once again recommended that there be no directed fishing of this stock and that by-catch protocols be applied when prosecuting other fisheries. The Council also recommended the encouragement of co-operative science-industry surveys. For 1999 and 2000, the Council again recommended that there be no directed fishing of 3Ps American plaice, and again recommended that co-operative science/ industry survey work be undertaken.

Sources

DFO Science

A2-19(2000) Newfoundland Region Groundfish Overview

FRCC Consultations

St. John's, NF (January 22)
Marystown, NF (January 23)
Harbour Breton, NF (January 25)
Clarenville, NF (January 26)

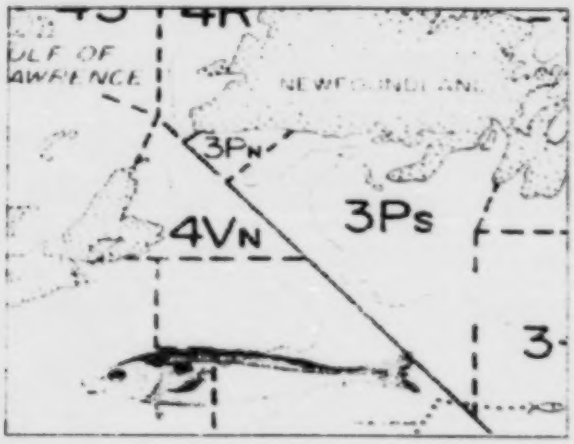
Briefs Received

Groundfish Enterprise Allocation Council (2001-010-00052)

Council's Views on Stock Status

Overall Stock Indicator:	increasing
	Compared to average
Spawning Biomass:	improving
Total Biomass:	increasing
Recruitment:	poor
Growth and Condition:	not available
Age Structure:	all years low recently
Distribution:	increasing in all areas
Recent Exploitation:	low; by-catch only

HADDOCK - 3Ps



2001 CONSULTATIONS

The FRCC held public consultations on this stock in St. John's, Marystown, Harbour Breton, and Clarenville during January 2001. No stakeholder comments were received on this stock.

ANALYSIS & RECOMMENDATIONS

The 2000 DFO Newfoundland Region Groundfish Overview indicates that:

- The index of biomass peaked in 1985 but declined to low levels in subsequent years.
- The 1998, 1999 and 2000 survey results indicate some increase, but the biomass was still low compared to the mid to late 1980s.
- The 1999 and 2000 surveys showed significant numbers of young haddock which appear as the 1998 yearclass.

The FRCC recommends that there be no directed fishing for 3Ps haddock in 2001/2002.

The FRCC recommends that catches not exceed those required for the normal conduct of fisheries directed towards other species.

The FRCC recommends that DFO management monitor closely the by-catch of haddock and establish management protocols to ensure fishing mortality is minimized on the 1998 yearclass.

HISTORY OF FRCC RECOMMENDATIONS

In November 1993, the Council noted that the TAC had been reduced to 500t for 1993, from 3,200t in 1992. The by-catch of haddock was significantly reduced because of closures in fisheries for other species. The Council recommended that there be no directed fishing for the 3Ps haddock stock in 1994 and that by-catches be limited to 500t. In November 1994, the Council reiterated its advice for no directed fishery and recommended reducing the by-catch limit to 100t during 1995. This advice was repeated for 1996.

In October 1996, the Council recommended that there be no directed fishing for 3Ps haddock in 1997 and that by-catches be limited to 300t and implemented so as not to impede a limited cod fishery.

Since 1998, the FRCC has recommended that there be no directed fishery on this stock and that by-catch protocols be applied when prosecuting other fisheries

Figures are in 000t

Year	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000*
TAC	--	--	0.15	2.2	3.2	3.2	3.2	3.2	0.5	by-catch						
Catch	7.5	5.3	2.7	2.4	2.9	1.5	0.5	0.5	0.1	0.02	0.04	0.09	0.06	0.075	0.1	0.023

*Catch as of Nov. 01/00

1. Figures are from the Integrated Fisheries Management Plan Atlantic Groundfish

Sources

DFO Science

A2-19(2000) Newfoundland Region Groundfish Overview

FRCC Consultations

St. John's, NF (January 22)
Marystown, NF (January 23)
Harbour Breton, NF (January 25)
Clarenville, NF (January 26)

Briefs Received

No briefs received

Council's Views on Stock Status

Overall Stock Indicator:	low
	Compared to average
Spawning Biomass:	low, unknown
Total Biomass:	low, unknown
Recruitment:	signs of recruitment from 1998 yearclass.
Growth and Condition:	not available
Age Structure:	not available
Distribution:	increased inshore
Recent Exploitation:	low, by-catch only

POLLOCK - 3PS

2001 CONSULTATIONS

The FRCC held public consultations on this stock in St. John's, Marystown, Harbour Breton, and Clarenville during January 2001. Fishermen continue to suggest that pollock appear to be more abundant than the research vessel survey suggests. Fishermen reported an abundance of good-sized pollock in the inshore area, and that pollock by-catches were higher this year. Fishermen were generally optimistic that the warming trend in water temperature might signal an increase in this semi-pelagic, temperature-sensitive fish.

ANALYSIS & RECOMMENDATIONS

The 2000 DFO Newfoundland Region Groundfish Overview indicates that:

- Historically warmer periods have coincided with higher abundance of pollock in this area.
- Due to the pelagic nature of the species, research vessel surveys (bottom trawl) does not give a reliable index of abundance or biomass.
- In 2000, survey biomass was estimated at only 474t, a significant decline from a recent peak level in 1999.

The FRCC recommends that there be no directed fishing for 3Ps pollock in 2001/2002.

The FRCC recommends catches not exceed those required for the normal conduct of fisheries directed towards other species.

HISTORY OF FRCC RECOMMENDATIONS

In November 1993, the Council noted that there were very few pollock in 3Ps and the TAC was reduced from 5,400t to a 600t by-catch limit. The Council recommended that there be no directed fishing for the 3Ps pollock stock in 1994 and that by-catches be limited to 500t. In November 1994, the Council re-iterated its advice for no directed fishing in 1995 and recommended reducing the by-catch limit to 100t. This recommendation was repeated for 1996.

In October 1996, the Council recommended that there be no directed fishing for 3Ps pollock in 1997 and that by-catches be limited to 1,500t, and implemented so as not to impede a limited cod fishery.

Since 1998, the Council once again recommended that there be no directed fishing for 3Ps and that by-catch protocols be applied when prosecuting other fisheries.

Figures are in 000t

Year	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000*
TAC	--	--	1.5	5.4	5.4	5.4	5.4	5.4				by-catch				
Catch	2.3	7.1	5.0	3.9	3.4	1.7	1.1	0.6	0.06	0.09	0.15	0.13	0.6	0.075	0.74	0.78

*Catch as of Nov. 01/00

1. Figures are from the Integrated Fisheries Management Plan Atlantic Groundfish

Sources

DFO Science

A2-19(2000) Newfoundland Region Groundfish Overview

FRCC Consultations

St. John's, NF (January 22)
Marystown, NF (January 23)
Harbour Breton, NF (January 25)
Clarenville, NF (January 26)

Briefs Received

No briefs received

Council's Views on Stock Status

Overall Stock Indicator:	unknown; appears to be relatively low
	Compared to average
Spawning Biomass:	unknown
Total Biomass:	hard to estimate
Recruitment:	positive signs inshore
Growth and Condition:	unknown
Age Structure:	unknown
Distribution:	sporadic at northern limit of range; may increase with warmer water
Recent Exploitation:	low-medium, by-catch

SKATES - 3LNOPS

2001 CONSULTATIONS

The FRCC held public consultations on this stock in St. John's, Marystown, Harbour Breton, and Clarenville in January 2001. No stakeholder comments were received on this stock.

ANALYSIS & RECOMMENDATIONS

Of the 8-10 species of skate found in waters around Newfoundland and Labrador, thorny and smooth skates comprise the bulk of catches by commercial fishery and research vessels. Although thorny skates are widely distributed, tagging studies reveal they exhibit limited movement, with re-captured animals found infrequently beyond 100 kms of the site of initial capture.

In comparison to an individual cod which can release millions of eggs a year during a relatively short spawning period, a female skate will lay only 6-40 eggs throughout the year. Special challenges are presented by the limited reproduction potential of this species and insufficient biological information.

The 2000 DFO Newfoundland Groundfish Overview reveals there has been an increase in survey biomass index across the entire stock area from historically low levels in the mid-1990s. Average size of skates is increasing due to the increased number of mature individuals in the population. The implementation of Council's recommendation for three separate management units for 1997 has begun the process of shifting effort across the entire stock area. Due to the sedentary nature of skates and their tendency to form local aggregations, the management over the three divisions appears to be having a positive effect. The serious deficiency of biological and abundance information on this resource has been emphasized. The FRCC is concerned that there continues to be an unregulated fishery outside Canada's 200-mile zone with recent reported catches in the order of 8-10,000t.

The FRCC recommends that 3LN, 30, and 3Ps continue to be treated as separate management areas.

The FRCC recommends that the overall TAC for the Canadian portion of the zone be set at 3,000t in 2001/2002: this should be distributed between management areas, as recommended in the 1996 Stock Status Report.

HISTORY OF FRCC RECOMMENDATIONS

A directed fishery for skates developed on the southern Grand Banks during 1993. Council conducted its first review of this stock in 1995 and recommended a precautionary TAC of 2,000t for 1996 for this new fishery. It was further recommended that steps be taken to distribute effort throughout the management area to prevent heavy exploitation on concentrations. For 1997, Council acted further in its efforts to have the fishery distributed across the entire stock area. Council recommended a 3,000t TAC for 1997 with a provision that it be divided among three separate management units, 3LN, 3O and 3Ps, as defined in the 1996 stock status report. As well, to supplement information gathering on this resource, cooperative industry science initiatives were encouraged.

Since 1998, the FRCC recommended that 3LN, 30, and 3Ps continue to be treated as separate management areas; and that the overall TAC be set at 3,000t.

Figures are in 000t

Year	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000*
TAC											6	2	3	3	3	3
Catch	11.4	15.9	19.3	19.5	15.9	14.7	28.4	4.1	5.5	11.5	7.5	5.9	13.7	13.60	13.30	1.22

*Catch as of Nov. 01/00

1. Figures are from the Integrated Fisheries Management Plan Atlantic Groundfish

Sources

DFO Science

A2-19(2000) Newfoundland Region Groundfish Overview

FRCC Consultations

St. John's, NF (January 22)
Marystown, NF (January 23)
Harbour Breton, NF (January 25)
Clarenville, NF (January 26)

Briefs Received

No briefs received

Council's Views on Stock Status

Overall Stock Indicator:	increasing trend
	Compared to average
Spawning Biomass:	unknown
Total Biomass:	recovering, improving trend
Recruitment:	unknown
Growth and Condition:	not available
Age Structure:	improving
Distribution:	local concentrations
Recent Exploitation:	increasing in the unregulated foreign fishery

Witch Flounder - 3Ps

2001 Consultations

The FRCC held public consultations on this stock in St. John's, Marystown, Harbour Breton, and Clarenville during January 2001. Stakeholders indicated that the offshore and inshore components of the stock are increasing as evidenced by increasing high catch rates which are up over 30% in the past two years.

Analysis & Recommendations

The 2000 DFO Newfoundland Region Groundfish Overview indicates that:

- Stock size estimates during the last several years have fluctuated within a range which, on average, is about two-thirds of the average stock size during the late 1980s and early 1990s.
- No indication of increased recruitment.
- Stock appears to be stable under current level of exploitation.

Quotas for witch were first set in the mid-1970s at 3,000t; these were reduced to 1,000t in the late 1980's. Catches come mainly from St. Pierre Bank in depths of 200-900 m. The research survey relative biomass index has shown substantial variation but no trend between 1976-1994. The research survey does not cover Fortune Bay where a large portion of the catch occurs. The 1999/2000 GEAC surveys show results similar to the DFO survey. The CPUE in the offshore fishery has increased from 843 kg/hr in 1999 to 1092 kg/hr in 2001 and inshore fishermen indicate that catches in the seining fishery have been among the highest seen.

The FRCC recommends that the TAC for 3Ps witch flounder be set at 650t for 2001/2002.

The FRCC recommends that in order to meet optimum maturity levels for this stock, the mesh size must be standardized throughout the area.

The FRCC recommends that given there has been no new assessment of this stock, a joint DFO/ industry study be conducted in the inshore areas to assist in the overall assessment process such as appropriate biological sampling, a tagging/movement component, and identification of stock subcomponents. The industry survey is to be conducted concurrently with the DFO research vessel survey to ensure that no double counting or "missed fish" occurs due to possible movement into/out of survey areas.

The FRCC recommends that tonnages required for this work are to be determined by DFO science and allocated for this purpose only upon approval of a comprehensive plan. An evaluation of the study is to be conducted upon completion of its year of implementation. These catches are to be in addition to TAC.

History of FRCC Recommendations

In November 1993, the Council noted that this stock had been relatively stable and recommended that the TAC level of 1,000t be maintained for 1994. In November 1994, the Council re-iterated its recommendation for the continuation of a TAC level of 1,000t for 1995. Because biomass estimates were historically low the Council recommended that the TAC be reduced to 500t for 1996 and again in 1997. For 1997 the Council recommended that an industry /science survey be encouraged.

For 1998, the Council recommended that the 1998 TAC for 3Ps witch flounder be set at 650t, and to meet optimum maturity levels for this stock, the mesh size be set in accordance with selectivity studies. The Council also recommended that since there had been no new assessment of this stock, a joint DFO/industry

Figures are in 000t

Year	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000*
TAC	3	3	3	1	1	1	1	1	1	1	1	0.5	0.5	0.65	0.65	0.65
Catch	0.6	1.1	1	0.30	0.87	1	1.1	1	0.86	0.4	0.26	0.23	0.28	0.51	0.71	0.18

*Catch as of Nov. 01/00

1. Figures are from the Integrated Fisheries Management Plan Atlantic Groundfish

study be conducted in the inshore areas to assist in the overall assessment process such as appropriate biological sampling, a tagging/movement component, and identification of stock sub-components. These recommendations were repeated for 1999 and 2000.

Sources

DFO Science

A2-19(2000) Newfoundland Region Groundfish Overview

FRCC Consultations

St. John's, NF (January 22)
Marystown, NF (January 23)
Harbour Breton, NF (January 25)
Clarenville, NF (January 26)

Briefs Received

No briefs received

Council's Views on Stock Status

Overall indicator:	about recent average
	Compared to average
Spawning biomass:	not available
Overall biomass:	two-thirds of late 1980s and early 1990s
Recruitment:	about long term average
Growth and Condition:	not available
Age structure:	not available
Distribution:	in deep water
Recent exploitation:	low

Appendix 1: NAFO Letter

NAFO LETTER

August 4, 2000

The Honourable Herb Dhaliwal, P.C., M.P.
Minister of Fisheries and Oceans
200 Kent Street
Ottawa, ON K1A 0E6

Dear Minister:

Section 4.5 of the Terms of Reference of the Fisheries Resource Conservation Council (FRCC) states:

"The Council may also advise the Minister on the position to be taken by Canada with respect to straddling and transboundary stocks under the jurisdiction of international bodies such as the Northwest Atlantic Fisheries Organization (NAFO)."

Consequently, the FRCC has reviewed the Report of the NAFO Scientific Council with specific reference to matters of particular interest to Canada, and offers advice on Total Allowable Catches for 2001, as well as other conservation measures for NAFO-managed transboundary groundfish stocks, in addition to 2J3KL cod.

The Council advocates an ecosystem approach to fisheries. The Grand Banks of Newfoundland form a unique and definable marine ecosystem upon which many fisheries are based. Populations of many species are contiguous across the present boundary between the Canadian EEZ and the NAFO Regulatory Area (NRA). However, there are two different and often irreconcilable management regimes, one inside the Canadian EEZ and one outside in the NRA. For example, the Canadian minimum size for Yellowtail flounder is 30 cm, whereas in the NRA it is 25 cm. Bycatch of American plaice occurs largely in the NRA even though the overwhelming majority of this stock's biomass is in the Canadian zone. Nearly 80% of the catch of 2+3KLMNO Greenland halibut is being taken in a very small area of the range of this stock (ca. 15%), mostly within the NRA in 3LNO. These are specific examples of the broader problem of managing the Grand Banks ecosystem as a single and unified fisheries ecosystem.

The FRCC has little confidence in the conservation methods employed in the fisheries in the NRA. Most stocks remain at historically low levels. The Council sees in these fisheries entrenchment of non-compliance and circumvention of regulations intended to rebuild stocks on the Grand Banks. The Council has concerns about the continuation and objectivity of observer coverage in the NRA, and foresees difficulties in implementation of a renewed fisheries management based on conservation principles and a full suite of strategies well beyond yield maximization of single species TAC. Therefore, the FRCC considers that conservation of these fisheries and this ecosystem will not be achievable without a full ecosystem approach to the Grand Banks fisheries management consistent with Canadian fisheries jurisdiction.

The most straightforward way to accomplish the above goal would be to extend jurisdiction or implement custodial management to include the full ecosystem of the continental shelf and Grand Banks. Another would be to upgrade fishery conservation practices and management in the NRA. As a key part of these strategies, **the FRCC recommends the establishment of areas closed to commercial fishing to protect spawning and juvenile fish, as a first step in the development of Marine Protected Areas on the Grand Banks.** Closed areas would extend into the NRA, as well as include parts of the waters of the coastal state.

Conservation measures adopted by the NAFO Fisheries Commission for transboundary stocks should be consistent with those already in place in Canadian waters. The use of stricter management measures in the Canadian zone than in the current NRA only penalizes Canadian fishermen and industry without gaining the full conservation benefits for the fisheries. Can we continue to ask Canadian industry and fishermen to pay the price for conserving our fish stocks and ecosystem for the benefit of NAFO fisheries?

Bycatch remains unacceptably high in the NRA. The FRCC believes this is by design. The NAFO regime allows bycatches of up to 10% by weight of any given quota in directed fisheries. Allowing such a large bycatch "quota" encourages vessels of some contracting parties to fish directly for stocks under moratoria. The Council recognizes efforts made by Canada to change these practices, and urges that these efforts continue.

The FRCC recommends that the NAFO bycatch regime be amended to ensure that bycatches are truly unavoidable, and not the result of *de facto* directed fisheries.

Canada has implemented minimum mesh sizes in its various domestic fisheries in order to ensure the increased protection of juvenile fish.

The FRCC recommends that the question of mesh size be addressed in a comprehensive manner for groundfish in the NAFO Regulatory Area, with the objective of increasing minimum mesh size to 145 mm. Such a process should start with the preparation of a report by DFO on the impact of a change in mesh size from 130 mm to 145 mm (in terms of yield per recruit, spawners per recruit, and changes in selectivity and catch rates in the short and long term).

In conjunction with increased mesh sizes, Canadian Conservation Harvesting Plans also establish minimum fish sizes. Such minima, while in place for Canadian industry on transboundary stocks, are not the same in the NAFO Regulatory Area. Where Canadian minimum sizes differ from those of NAFO, the FRCC has recommended a minimum size: each of these recommendations represents an increase from the current NAFO-established minimum fish size.

The FRCC recommends that minimum fish sizes be established as recommended in this report and that small fish protocols be applied in the NRA as they are in the Canadian zone.

The FRCC concludes that management consistent with the precautionary approach and conservation of the Grand Banks fisheries ecosystem requires that a unified ecosystem approach be taken to the fisheries of the Grand Banks. Measures are urgently required to upgrade conservation methods in the NRA to Canadian standards. Moreover, the Council believes that the coastal state must champion the closing of areas that are critical to fisheries production to commercial fishing across the Grand Banks ecosystem (e.g., South-East Shoal, Virgin Rocks).

In keeping with recent practice, the FRCC has prepared this report largely on the basis of information contained in the report of the NAFO Scientific Council.

1. 2J3KL Cod (Northern Cod)

The northern cod has been recognized historically as a stock complex with seasonally overlapping coastal and shelf spawning components. Recent studies have confirmed this. The 2000 DFO Stock Status Report indicated that the coastal components of this stock in 3L and southern 3K are currently stronger than the shelf and more northerly coastal components. Cod from the 3Ps stock are also known to migrate into southern 3L seasonally. Northern cod has been the subject of recent FRCC advice that recommended total removals be set at 5500t to allow for an index fishery for the coastal portions of northern 3L and 3K, and 1500t for an index fishery in the coastal part of southern 3L. These removals would include the continuation of the sentinel fishery for 2J3KL.

Based on the low abundance of fish in shelf areas, **the FRCC recommends that Canada's position support a continuing moratorium on fishing of 2J3KL cod in Division 3L in the NAFO Regulatory Area.**

2. Grand Banks Key Stocks

All NAFO-managed stocks are of importance to Canada. At the present time, the most significant to Canada are:

Yellowtail flounder in Divisions 3LNO
American plaice in Divisions 3LNO
Witch flounder in Divisions 3NO
Cod in Divisions 3NO
Redfish in Divisions 3LN
Greenland halibut in Divisions 2&3KLMNO

The following table shows the TACs and catches (in 000 tonnes) for these stocks since 1980:

	Year	80-84*	85-89*	90	91	92	93	94	95	96	97	98	99	00
Yellowtail flounder	TAC	19.6	13	5	7	7	7	7	0	0	0	4	6	10
3LNO	Catch	13.5	20.4	13.8	16.3	10.2	13.6	2.1	0.1	0.4	0.8	4.4	7	
American plaice	TAC	53.5	43.2	24.9	25.8	25.8	10.5	4.8	0	0	0	0	0	0
3LNO	Catch	45.6	51.6	32.5	34.7	13.4	17.1	7.4	0.6	0.9	1.4	1.6	2.6	
Witch flounder	TAC	5.4	5	5	5	5	5	3	0	0	0	0	0	0
3NO	Catch	3	7.3	4.2	4.8	5	4.4	1.1	0.3	0.4	0.5	0.6	0.8	
Cod	TAC	22.4	32.8	18.6	13.6	13.6	10.2	6	0	0	0	0	0	0
3NO	Catch	26.4	41.1	29	29	12.6	9.7	2.7	0.2	0.2	0.4	0.6	0.9	
Redfish	TAC	25	25	25	14	14	14	14	14	11	11	0	0	0
3LN	Catch	19.3	45.9	29.1	25.8	27.3	21	6	2	0.5	0.6	1.6	2.3	
Greenland halibut	TAC	55	95	50	50	50	50	25	27	27	27	27	33	35
2&3KLMNO	Catch	28.9	21.6	47.5	65	63.2	42-62	51	15	19	20	20	24	

Note *: TACs and Catches for 1980-1984 and 1985-1989 are five year averages.

This table demonstrates that, with some exceptions, catches have generally exceeded TACs. These excess catches have occurred in the NAFO Regulatory Area and have included excessive amounts of juvenile fish caught both by member and non-member states.

Canada's shares of the TACs for these stocks are:

3LNO Yellowtail flounder	97.5%
3LNO American plaice	98.5%
3NO Witch flounder	60%
3NO Cod	47.6%
3LN Redfish	42.6%
Greenland halibut 2+3K	100%
3LMNO	15%

A. 3LNO Yellowtail Flounder

The NAFO Scientific Council's current view is that the stock size has increased over the past year and that the stock biomass is perceived to be at a level close to that of the mid-1980s.

The FRCC notes that abundance calculations for this stock are based on uncertain estimates of the swept area of the survey trawl, and the assumption that the survey gear catches all fish between the wing ends of the net. In practice, this assumption might lead to under or overestimation of actual biomass. The FRCC therefore considers that DFO should move as soon as possible to establish a better estimate of the biomass of this stock.

The FRCC accepts the NAFO Scientific Council recommendation that the TAC for 3LNO yellowtail flounder be set at 13,000t in 2001. However, given the lack of an estimate of the true biomass of this stock, that catches often exceed the TAC, and that the current recommended TAC is near long-term levels that appear to be sustainable in this stock, the Council recommends a policy of stability rather than yield maximization be employed in the setting of future TACs.

In addition, the FRCC recommends that:

(a) the NAFO by-catch regime be amended to ensure that bycatches of yellowtail flounder are truly unavoidable;

(b) key juvenile nursery grounds be protected through the establishment of closed areas (eg. South-east Shoal of the Grand Bank);

(c) a minimum fish size of 30 cm be set for 3LNO Yellowtail flounder within the NRA, and that the small fish protocol and a no discarding policy be implemented as in the Canadian zone; and,

(d) timing (and areas) of peak spawning be identified by the NAFO Scientific Council at its next meeting.

B. 3LNO American Plaice

The NAFO Scientific Council advises that there have been no strong year classes since the mid-1980s. Even in the absence of a directed fishery since 1995, this stock remains at a low level. Catches have increased by more than 400% since 1995 to 2600t in 1999 despite the moratorium. This alleged "bycatch" is caught for the most part in the NAFO Regulatory Area. This is almost certainly directed for because the distributions of the target species in the NRA, which are Greenland halibut, skate, grenadier, and 3O redfish, for the most part do not overlap with those of American plaice. In fact, it would be expected that the major problem in bycatch would occur in the yellowtail flounder fishery, because the distributions of yellowtail flounder and American plaice do overlap. However, the FRCC notes that only 317t of American plaice bycatch came from the yellowtail flounder fishery, with the balance from the deeper water fisheries and in the unregulated skate and grenadier fisheries in the NAFO Regulatory Area. The FRCC has great concern about the continuing increase in exploitation of this resource under moratorium (as supposed bycatch).

The FRCC accepts the NAFO Scientific Council recommendation that there be no directed fishing for American plaice in Divisions 3LNO in 2001. However, the FRCC has difficulty accepting that there is no directed fishery on this species.

In addition, the FRCC recommends that:

(a) the NAFO by-catch regime be amended to ensure that catches of American plaice are limited to bycatch that is truly unavoidable;

(b) a minimum fish size of 30 cm be set for 3LNO American Plaice within the NRA, and that the small fish protocol and a no discarding policy be implemented as in the Canadian zone; and,

(c) key juvenile nursery grounds be protected immediately through the establishment of closed areas.

C. 3NO Witch Flounder

The NAFO Scientific Council advises that the 1999 biomass estimate for witch flounder in 3NO continues to be at a very low level and there is little evidence that stock size has increased despite a moratorium since 1995.

The FRCC accepts the NAFO Scientific Council recommendation that there be no directed fishing for 3NO witch flounder in 2001.

In addition, the FRCC recommends that:

(a) the NAFO by-catch regime be amended to ensure that bycatches of witch flounder are truly unavoidable; and,

(b) a minimum fish size of 30 cm be set for 3NO witch flounder within the NRA, and that the small fish protocol and a no discarding policy be implemented as in the Canadian zone.

D. 3NO Cod

The NAFO Scientific Council advises that biomass levels for this stock are at an all time low and year class strengths in the population are weak. Recruitment has been poor, and once strong 1989 and 1990 year classes are now at low levels.

The FRCC notes that the reported catch in this stock has doubled in the past 2 years and that, based on known distributions, it is likely that many of these fish are large spawners and therefore are key contributors to the reproductive potential of this stock. The Council believes that these fish must be protected from exploitation if this stock is to rebuild.

The FRCC accepts the NAFO Scientific Council recommendation that there be no directed fishing for 3NO cod in 2001.

In addition, the FRCC recommends that:

(a) the NAFO by-catch regime be amended to *ensure that bycatches of cod are truly unavoidable;*

(b) a minimum fish size of 45 cm be set for 3NO cod within the NRA, and that the small fish protocol and a no discarding policy be implemented as in the Canadian zone; and,

(c) DFO and NAFO should carefully monitor cod bycatch in the various directed fisheries in 3NO, both in the Canadian zone and in the NRA, and take effective measures (e.g. area and/or seasonal closures, 100% observer coverage, etc.) to reduce current bycatch.

E. 3LN Redfish

The NAFO Scientific Council advises that biomass levels in 3L are low and recruitment in this area has been poor since the mid-1980s. There is evidence of good recruitment in the 1986 and 1987 year classes which will form the greatest proportion of the spawning stock biomass, but recruitment since that time has been weak. This stock remains at very low levels.

The FRCC accepts the NAFO Scientific Council recommendation that there be no directed fishing for 3LN redfish in 2001.

In addition, the FRCC recommends that:

(a) the NAFO by-catch regime be amended to ensure that bycatches of redfish are truly unavoidable; and,

(b) effective conservation measures by put in place to protect the 1986 and 1987 year classes.

F. Greenland Halibut 2+3KLMNO

The NAFO Scientific Council advises that above average recruitment in the period 1990-1995 has led to improvement in biomass levels in the 2+3KLMNO Greenland halibut stock. While the fishable biomass was below the long term average in 1997, it is expected to increase in 1999 and 2000 as the 1990-1995 year classes recruit to the fishery. Current catches consist mainly of immature fish.

The NAFO Scientific Council advises that there is scope for catches in 2001 to increase to up to 44,000t and that this level of catch is not likely to lead to an increase in fishing mortality.

The FRCC acknowledges that projected increases in this stock are based entirely on survey estimates of recruitment of early 1990s year classes. Current spawning biomass levels are very low. The "scope for increase" suggested by the NAFO Scientific Council is based on optimistic prospects for the early 1990s year classes for which there is still considerable uncertainty. Moreover, the optimistic juvenile survey data come from only a portion of the full stock range in 2J and 3K. Any increase in catch wagers the future of this stock on the strength of those few year classes. The FRCC also notes that the current catch of some 30,000t is near the long-term average for this stock. The Council does not support any increase in the total removals from this stock, and is convinced that any increase imposes an unacceptable risk on this stock.

The FRCC does not accept the NAFO Scientific Council recommendation and recommends that catches remain stable at up to 30,000t in 2001.

The FRCC believes that the implementation of measures to enable greater escapement of juvenile fish is essential and therefore recommends that:

(a) in light of emerging recruitment in this fishery that mesh size in this fishery be increased to 145 mm;

(b) a minimum fish size consistent with a mesh of 145mm be set for 2+3KLMNO Greenland halibut within the NRA;

(c) to reduce the bycatch of American plaice, cod and other species, and increase the size of fish being landed, trawling for Greenland halibut should be restricted to waters deeper than where bycatch is concentrated; and,

(d) the bycatch of Greenland halibut in the Canadian and international shrimp fisheries be closely monitored and kept at the lowest possible levels.

G. Exploitation of Unregulated Species

There continue to be groundfish fisheries taking place in the NRA in an unregulated manner, for which no TACs are set. These unregulated fisheries are of concern for two reasons. First, increases in fishing effort on these species pose serious conservation concerns for these species directly, some of which such as skate, grenadier and 3O redfish are highly vulnerable to exploitation as a consequence of their slow growth and low productivity. Second, bycatches in directed fisheries such as those for skate and roughhead grenadier pose serious conservation threats to species such as American plaice.

The FRCC considers that under the Precautionary Approach, no unregulated fisheries should be permitted. Moreover, no new fisheries should begin without an evaluation of stock status with guidelines and limits set to harvest levels.

Conclusions:

With the exception of yellowtail flounder and Greenland halibut, estimated biomass levels for all of the above stocks are at or near the lowest levels ever observed. Measures adopted by the NAFO Fisheries Commission have, for the most part, been ineffective in rebuilding or conserving these stocks. With the exception of yellowtail flounder and Greenland halibut, the FRCC recommends that Canada continue to support moratoria on fishing of these stocks, both inside and outside the 200 mile EEZ.

In addition to the above stocks, the FRCC continues to recommend a moratorium on fishing of 3NO capelin.

During its deliberations, the FRCC became concerned that while foreign observer reports are made available to the NAFO Scientific Council, they are not compiled and analyzed by the scientists. Scientists do however analyze reports from Canadian observers.

The FRCC recommends that the observer coverage within the NRA be continued at 100% and that reports be compiled and analyzed in a timely fashion.

Finally, the FRCC believes that conservation of the Grand Banks ecosystem must be based on a full and unified ecosystem-based fisheries management plan. Certain areas of the Banks, both in the Canadian and NAFO zones, are of great importance to spawning and juvenile fish. Hence, the FRCC recommends that consideration be given to protecting areas of the Banks from fishing as a step toward full ecosystem conservation as Marine Protected Areas. The first area for consideration should be the South-East Shoals of the Grand Bank, which is a unique geological area known to be the spawning ground for the southern Grand Banks capelin stock, and an important juvenile area for species of groundfish.

SUMMARY:

- **Conservation of the Grand Banks ecosystem must be based on a full and unified ecosystem-based fisheries management plan;**
- **NAFO-based management has been ineffective at rebuilding groundfish stocks;**
- **All stocks except Greenland halibut and yellowtail flounder should stay under moratoria;**
- **Directing for a % bycatch, particularly of American plaice, must stop;**
- **All fisheries must be regulated;**
- **Greater escapement of immature fish must be achieved;**

- **No increase in removals is warranted for Greenland halibut;**
- **Closures of fisheries in sensitive areas of the Grand Banks, especially capelin spawning and groundfish juvenile areas, must be undertaken (e.g. South-East shoal).**

We trust that these recommendations are helpful, and wish you and the Canadian delegation well in the upcoming NAFO meetings.

Yours truly,

Fred Woodman
Chairman

Appendix 2: Letter to Stakeholders

LETTER TO STAKEHOLDERS

December 20, 2000

To stakeholders,

During the week of January 22, 2001, the Fisheries Resource Conservation Council (FRCC) will gather information from stakeholders on groundfish stocks in NAFO Areas 0, 2 + 3. This will assist the FRCC in making recommendations to the Minister of Fisheries and Oceans on groundfish conservation requirements for 2001/2002.

The FRCC will review the scientific assessments conducted by the Department of Fisheries and Oceans, the results of the sentinel surveys and the commercial fishery, as well as other information. The Council will consult with interested stakeholders in the following locations:

January 22	St. John's, Newfoundland - Delta St. John's
January 23	Marystown, Newfoundland – Hotel Marystown
January 25	Harbour Breton, Newfoundland – Lion's Club
January 26	Clarenville, Newfoundland - Lion's Club

Meetings will begin at 9:00 am, and will consist of two parts:

PART ONE

The first part will be on the current status of the stocks, and will solicit information from industry regarding catch levels for 2001/2002. It will begin with short presentations of the most recent scientific information by scientists from DFO. The Council will then ask for information from stakeholders on the following stocks:

Haddock 3LNO	Redfish 2+3K	American Plaice 2+3K
Witch Flounder 2J3KL	Greenland halibut 0B+1B-F	Greenland halibut 2+3KLMNO
Roundnose grenadier S-A 0	Roundnose grenadier 2+3	Lumpfish
Cod 2GH	Cod 3Ps	American Plaice 3Ps
Haddock 3Ps	Pollock 3Ps	Skates 3LNOPs
Witch Flounder 3Ps		

Some of the questions to which the Council will be seeking answers are :

- What are your views of the stock status?
- What evidence is there other than what is in the SSR and other surveys?
- What has the environment been like the past year or two compared to earlier times such as in the 1960s?
- What other species are around now in numbers that may or may not have been there before?
- How are the capelin, sand lance and krill doing in your area?
- What is your opinion about how the fishery was managed and prosecuted in the past years?
- Have you any suggestions as to how we could do better?
- Do you think the catch has been too high, too low, or about right?
- Are the fish getting larger, smaller or about the same on average?
- Are there signs of small fish in your area?
- In your opinion, is there wastage in the gillnet fishery and how much?

Part Two

After a break, the Council would like to discuss long term planning for 3Ps cod. You may recall that I wrote to you in September 2000 outlining the Council's plans to develop Fisheries Resource Conservation Plans (FRCPs) for Atlantic Canadian groundfish stocks. It is to develop such plans that we will hold this second part of the consultation sessions.

The development of FRCPs is a recognition of the need to develop the long-term approaches for Atlantic groundfish stocks contemplated in the Council's mandate, and as outlined in the FRCC's 1997 Groundfish Conservation Framework. Indeed, FRCPs represent the application, on an ecosystem basis, of the conceptual approach described in the Framework. This fits well with current initiatives to base fisheries management plans on clear and measurable conservation objectives. The Council has publicly stated its desire to work with stakeholders to develop such long-term approaches. You will recall that the Council's recent reports on Redfish, on Gulf of St. Lawrence Stocks, on Georges Bank, and on Northern Cod, among others, have foreshadowed plans to develop long-term approaches for these stocks.

The Council's mandate requires it to provide a mechanism for public and industry advice, and to integrate scientific expertise with the knowledge and experience of all sectors of the industry and develop a strong working partnership. Thus, the development of FRCPs, led by the FRCC, fundamentally involves the consideration of input from stakeholders, including fishermen, processors, scientists, fisheries managers, and conservation and protection personnel.

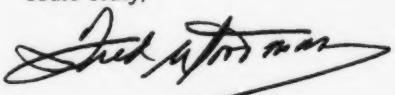
During this part of the consultation, the Council would like to examine questions such as:

- What is your idea of a long term plan for 3Ps cod?
- What type of gear do you think would be most sustainable in the long term?
- Are the fisheries of the past a good model for the future or should we be considering new things?
- Can we fish on the spawning grounds and sustain the fishery?
- What type of size structure do you think is best in the stock? Why?
- Were spawning fish known to occur in your area? When did they spawn? Are they still there? Can you identify the sites on a chart?

The Council hopes these discussions begin the development of a long-term plan for 3Ps cod. Given the importance of the meetings, I have enclosed a copy of the most recent Stock Status Report released by DFO. Normally, the Council does not distribute this DFO document, but in this exceptional circumstance, we thought it best to include a copy for you.

The success of these consultations is of interest to all stakeholders in the fishery. Your views are important and we hope you will participate fully.

Yours Truly,



Fred Woodman, Chairman

Appendix 3: FRCC Mandate and Membership

FRCC Terms of Reference

1. Introduction

The Government of Canada is committed to a more comprehensive approach to the conservation and management of our fisheries resource. This approach demands a better understanding of complex fisheries ecosystems - the interaction of fish with other species, predator-prey relationships, and also changes in the marine environment like ocean currents, water temperatures and salinity.

The Government of Canada is also committed to a more effective role in decision-making for those with practical experience and knowledge in the fishery.

The Minister of Fisheries and Oceans has established the Fisheries Resource Conservation Council (FRCC) as a partnership between government, the scientific community and the direct stakeholders in the fishery. Its mission is to contribute to the management of the Atlantic fisheries on a 'sustainable' basis by ensuring that stock assessments are conducted in a multi-disciplined and integrated fashion and that appropriate methodologies and approaches are employed; by reviewing these assessments together with other relevant information and recommending to the Minister total allowable catches (TACs) and other conservation measures, including some idea of the level of risk and uncertainty associated with these recommendations; and by advising on the appropriate priorities for science.

2. Definition of Conservation

Fisheries conservation is that aspect of the management of the fisheries resource which ensures that its use is sustainable and which safeguards its ecological processes and genetic diversity for the maintenance of the resource. Fisheries conservation ensures that the fullest sustainable advantage is derived from the resource and that the resource base is maintained.

3. Council Objectives

3.1 To help the government achieve its conservation, economic and social objectives for the fishery.The conservation objectives include, but are not restricted to:

3.1.1 rebuilding stocks to their 'optimum' levels and thereafter maintaining them at or near these levels, subject to natural fluctuations, and with 'sufficient' spawning biomass to allow a continuing strong production of young fish; and,

3.1.2 managing the pattern of fishing over the sizes and ages present in fish stocks and catching fish of optimal size.

3.2 To develop a more profound understanding of fish-producing ecosystems including the inter-relationships between species and the effects of changes in the marine environment on stocks.

3.3 To review scientific research, resource assessments and conservation proposals, including, where appropriate, through a process of public hearings.

3.4 To ensure that the operational and economic realities of the fishery, in addition to scientific stock assessments, are taken into account in recommending measures to achieve the conservation objectives.

3.5 To better integrate scientific expertise with the knowledge and experience of all sectors of the industry and thus develop a strong working partnership.

3.6 To provide a mechanism for public and industry advice and review of stock assessment information.

3.7 To make public recommendations to the Minister.

4. Mandate and Scope

4.1 The Fisheries Resource Conservation Council will address these objectives by bringing together industry, DFO science and fisheries management, and external scientific and economic expertise in one body.

4.2 The Council will:

4.2.1 advise the Minister on research and assessment priorities;

4.2.2 review DFO data and advise on methodologies;

4.2.3 consider conservation measures that may be required to protect fish stocks;

4.2.4 review stock assessment information and conservation proposals, including through public hearings, where appropriate; and,

4.2.5 make written public recommendations to the Minister on TACs and other conservation measures.

4.3 The Council may recommend any measures considered necessary and appropriate for conservation purposes such as TACs, closure of areas to fishing during specific periods, approaches to avoid catching sub-optimal sized fish or unwanted species, and restrictions on the characteristics or use of fishing gears.

4.4 The Council's scope includes Canadian fish stocks of the Atlantic and Eastern Arctic Oceans. In the first instance, the Council will address groundfish, and then subsequently take on responsibility for pelagic and shellfish species.

4.5 The Council may also advise the Minister on Canada's position with respect to straddling and transboundary stocks under the jurisdiction of international bodies such as the Northwest Atlantic Fisheries Organization (NAFO).

5. Size, Structure and Make-Up

5.1 The Council will consist of not more than 14 members with an appropriate balance between 'science' and 'industry'.

5.2 Members are chosen on merit and standing in the community, and not as representatives of organizations, areas or interests.

5.3 'Science' members, are drawn from government departments, universities or international posts, and are of an appropriate mix of disciplines, including fisheries management and economics.

5.4 'Industry' members are knowledgeable of fishing and the fishing industry and understand the operational and economic impacts of conservation decisions.

5.5 All members of the Council are appointed by the Minister.

5.6 All members, including the Chairperson, are appointed for a three year term; terms can be renewed.

5.7 Members appointed from DFO serve 'ex officio'.

5.8 Members have to disclose any interest in the Atlantic or Eastern Arctic fishery and take appropriate measures so as to avoid potential or real conflict of interest situations during the term of appointment.

5.9 The four Atlantic Provinces, Quebec and the Northwest Territories may each nominate one delegate to the Council. These delegates have access to the Council's information, and may participate fully in meetings, but will not be asked to officially endorse the formal recommendations to the Minister.

5.10 The Council is supported by a small Secretariat, to be located in Ottawa. The Secretariat will:

5.10.1 provide administrative support for the functioning of the Council;

5.10.2 provide a technical science and fisheries management support;

5.10.3 organize Council meetings;

5.10.4 record decisions of the Council;

5.10.5 undertake a professional communications function for the Council, providing a central point for communications to and from the Council; and

5.10.6 undertake such other matters as from time to time might be appropriate.

5.11 The Chairman may appoint an Executive Committee, consisting of the Chairman, Vice-Chairman, and three other Members.

5.12 In addition, the Chairman may, from time to time, strike an 'ad hoc' committee to deal with a specific issue.

6. Activities:

6.1 Reviews appropriate DFO science research programs and recommends priorities, objectives and resource requirements.

6.2 Considers scientific information - including biology, and physical and chemical oceanography, taking into account fisheries management, fishing practices, economics and enforcement information.

6.3 Conducts public hearings wherein scientific information is presented and/or proposed conservation measures/options are reviewed and discussed.

6.4 Recommends TACs and other conservation measures.

6.5 Prepares a comprehensive, long-term plan and a work plan for the Council which are reviewed annually at a workshop with international scientists and appropriate industry representatives.

6.6 Ensures an open and effective exchange of information with the fishing industry and contributes to a better public understanding of the conservation and management of Canada's fisheries resource.

FRCC MEMBERSHIP:

Members:

Fred Woodman, Chairman
Jean-Claude Bréthes, Vice-Chair
Maurice Beaudin
Bill Broderick
Bruce Chapman
Charlie Dennis
Jean Guy d'Entremont
Gabe Gregory
Nick Henneberry
Frank Hennessey
Dan Lane
Paul Nadeau
John Pope
George Rose

Provincial Delegates:

Ray Andrews, Nunavut
Mario Gaudet, New Brunswick
David MacEwen, Prince Edward Island
Dario Lemelin, Québec
Tom Dooley, Newfoundland and Labrador
Clary Reardon, Nova Scotia

Ex Officio:

Gilles Belzile
Barry Rashotte
Denis Rivard

Secretariat:

Michel G. Vermette, Executive Director
Tracey Sheehan
Helena DaCosta
Debra Côté

200 Mile Fishing Zone and NAFO Fishing Boundaries